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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Stephen T. Davis

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EXAMINER

METZMAIER, DANIEL S

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

05/29/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/518,617	Applicant(s) DAVIS ET AL.	
	Examiner Daniel S. Metzmaier	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4 and 7-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4 and 7-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 4, 7-10 and 12-17 are pending.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 4, 7-10 and 12-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation "optionally substituted with functional groups" but the remaining disclosure is silent regarding what functional groups are encompassed by said limitation. It is unclear what are the metes and bounds of the functional groups that make up said claim limitations.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 7, 12-13 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by England (6720290).

England teaches a foamed composition used to treat a gas containing well (column 1, lines 17-30), which can comprise a surfactant within the scope of the present invention (see claims and column 2, lines 35-50). A foam would reduce liquid loading as in claim 7. The whole purpose of using the foam is to increase productivity as in claims 12 and 13. England (column 7, example 2, lines 29-44) discloses the use of 2 gal/1000, which equates to 0.2 or 2000 ppm. Said values read on the claimed about 1000 ppm by volume of surfactant.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4, 7, 8, 12-14 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qu (2002/0023752).

Qu teaches a composition which can be used in gas wells (paragraph 0002), which can contain a zwitterionic surfactant within the scope of the present invention (0180). Foams are taught as being used at claims 22-24 and paragraph (0214). An alcohol is taught as being used as in claim 4 (see 0109 and 0207). Qu differs in that in the structure I of paragraph 0180, a specific example of R6 being alkylene of 2 is not disclosed. Qu however teaches that R6 is preferably alkylene of 1 to 3, and discloses

examples of R6 being 1. It would thus be obvious to one of ordinary skill in the art to utilize compounds of Qu having R6 as alkylene of 2, given the teaching of Qu that such are preferable, and the exemplification of R6 being alkylene of 1, since compounds with such similar structures would be expected to have similar utility. A foam would reduce liquid loading as in claim 11. The whole purpose of using the foam is to increase productivity as in claims 12 and 13.

7. Claims 9, 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qu (2002/0023752) or England (6720290), optionally in view of Carey (US 6143709).

Qu and England are taught above. Qu and England differ in not teaching the use of a capillary string for introduction of the foam and the concentration of about 1000 ppm by volume surfactant. It would however be obvious to one of ordinary skill in the art to utilize various known wellbore delivery means such as a capillary string, in order to achieve optimum pressure, delivery or placement of the fluid to the wellbore. The surfactants being the same as herein would be non-corrosive.

England (column 7, example 2, lines 29-44) discloses the use of 2 gal/1000, which equates to 0.2 or 2000 ppm.

Qu (¶ 184) discloses concentrations of zwitterionic surfactants including concentrations at 0.5%.

Merely modifying the process conditions such as temperature and concentration is not a patentable modification absent a showing of criticality for a result-effective

variable, i.e., a variable which achieves a recognized result. Clearly the concentration of a foaming surfactant is a result-effective variable for foaming.

To the extent Qu and England do not explicitly disclose capillary strings, Carey (column 1, lines 30 et seq) discloses the conventional use of capillary strings to introduce materials down the well in unloading processes. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ capillary strings for the introduction of the materials taught in Qu and England for the advantages taught in Carey.

Response to Arguments

8. Applicant's arguments filed 14 February 2008 have been fully considered but they are not persuasive.

9. Applicants (page 5) assert the office has interpreted the claim in terms of the references rather than applicants specification. Applicants do not define the metes and bounds of gas production that the limitation "during gas production" would distinguish the references. Since both references are directed to the production of hydrocarbon liquids and gas from wells, the limitation has been interpreted as any time during production prior to completion of the well as dormant.

10. Applicants (page 5) assert foams and alcohols are employed during fracturing rather than gas production. This has not been deemed persuasive for the above reasons.

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11. Applicants (page 6) assert the R_6 (a divalent linking group) defined as alkylene and hydroxyalkylene contain unsaturated groups. Divalent groups are commonly referred to as alkylene, such as methylene group, $-CH_2-$.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David W. Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/Daniel S. Metzmaier/
Primary Examiner, Art Unit 1796**

DSM